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# Institute for Policy Research



## Incentives and children's dietary choices: a field experiment in primary schools



### About this research

There is a growing interest from both academics and policy makers in the use of incentives to change health behaviours; especially of children. In October 2011, Michèle Belot (University of Edinburgh), Jonathan James (University of Bath) and Patrick Nolen (University of Essex) carried out a randomised controlled field experiment in 31 schools across England. The aim was to assess the effect of schemes that reward children with stickers, small toys and stationery for choosing fruit and vegetables at lunch time. Two incentive schemes (individual based and competition) were compared to a control group where no incentives were provided. The effects on choice and consumption were examined over the course of the four week intervention, immediately after the incentives were removed and six months later. In both incentive schemes pupils were given a sticker if they chose a fruit or vegetable at lunch time, or brought one in their packed lunch. Pupils in the individual treatment were given an additional reward on each Friday if they had collected four or more stickers over the week. In the competition scheme pupils were randomly assigned into groups of four, however the groups were only revealed at the end of the week and the pupil with the most stickers was given an additional reward.

Although results differ by age, gender and socio-economic background, the research found that the incentives increased the choice and consumption of fruit and vegetables, particularly among the group who were previously identified as not regularly eating fruit and vegetables. Furthermore, structuring the incentives as a competition had a greater and long-lasting effect on behaviour than rewarding based solely on individual choices (the individual scheme).

## Research findings in context

Poor nutrition leads to premature deaths and is a primary cause behind the recent surge in obesity, which is not only one of the leading causes of death but is also contributing to the rising cost of health care in many developed countries. According to the World Health Organization (2009), poor nutrition is related to three of the five highest risks for mortality in the world: high blood pressure; high blood glucose; and obesity. To improve nutrition, reduce health care costs and help prevent premature deaths, policy makers have been pushing information interventions, such as “5-a-day” campaigns, to encourage people to develop better eating habits. However, the effectiveness of information-only campaigns have been questioned, and policy makers are now considering if rewarding individuals for eating healthier is a better approach.

Despite the push by policy makers, it is actually an open question if rewarding individuals for eating healthier will work, and play any long-lasting role in changing eating behaviours. Indeed, some research shows that rewarding children for eating healthy items can lead to those items being less preferred.

This study examined two incentive schemes: an individual-based scheme and a competition. It found that, in the participating schools, incentivising students to choose healthy items had an overall positive effect on choice and consumption at lunchtime. However, the overall effect masks significant differences by age. In the individual scheme, year two students chose and ate fewer fruit and vegetables when incentivised than year five students taking part in the same scheme. Besides stark heterogeneous differences in the effect by age, there are some differences by incentive type. Overall the competition works better, while the positive effects of the individual scheme disappear after two weeks. The differences in the treatment effects also show up when the incentive scheme is removed. Students assigned to the competition scheme are more likely to continue eating fruit and vegetables in the week immediately following the treatment. Furthermore, six months later there continue to be positive effects on healthy eating behaviours for the pupil's eligible for free school meals.

## Key findings

**We find that the intervention had positive short run effects, which varied by age, gender and whether the child regularly ate fruit and vegetable before the intervention. Our findings can be summarised as follows:**

- The competitive scheme has positive effects across all subgroups.
- The individual scheme seems to work very well for older children, but it works less well for younger ones.
- The proportion of those trying fruit and vegetables increased by around a third for the group who before the intervention were not eating fruit and vegetables every day.
- Boys respond to both competitive and individual schemes, while girls mainly respond to the competition.
- The intervention had more pronounced effects, we also find more pronounced effects among the free school meal children, which is an encouraging result.
- Most of the effects remain immediately after the incentives are removed (the week following the intervention), but the study did not find strong evidence for habit formation in the longer run (six months after the reward scheme had been removed), except for among the group of free school meal children, which is a notable exception.

## Policy implications

The results are important for policy makers and health officials trying to combat problems associated with poor nutrition. It shows that positive incentives do work in encouraging healthy dietary choices, and that the results of a short term intervention can have long-lasting effects. However, a “one-size-fits-all” reward scheme is not likely to work. The mixed effects suggest that health incentives need to be evaluated at the individual level, and different policies may have to be developed for different subgroups. Furthermore, increasing the length of time an intervention takes place is not the only way policy makers can increase the likelihood that positive behaviours are adopted. For instance, competition based schemes could have larger and longer-lasting effect than individual-based schemes; which may not work as well for some groups of pupils.

## Methodology

A randomised controlled experiment was carried out in 31 schools in England involving a total number of 664 pupils in year two and five. Children's dietary choices at lunch were monitored for a period of six weeks and an intervention was carried out in two-thirds of the schools for a period of four weeks (starting one week after the monitoring began and ending one week before the monitoring stopped).

Schools were randomly placed into 1 of 3 groups.

1. Control schools – only choice and consumption was checked and no incentives were provided.
2. Individual based reward schools – children were given a sticker if they chose, or brought in their packed lunch, a fruit or vegetable. Children received an additional reward if they chose more than four fruits or vegetables over the course of the week.
3. Competition schools - children were given a sticker if they chose, or brought in their packed lunch, a fruit or vegetable. If they collected more stickers than their peers (they were assigned randomly each week to groups of four) they received an additional reward.



## Contact the researchers:

**Professor Michèle Belot**  
School of Economics  
University of Edinburgh  
[Michele.Belot@ed.ac.uk](mailto:Michele.Belot@ed.ac.uk)

**Dr Jonathan James**  
Department of Economics  
University of Bath  
[j.james@bath.ac.uk](mailto:j.james@bath.ac.uk)  
[www.bath.ac.uk/economics/staff/jonathan-james](http://www.bath.ac.uk/economics/staff/jonathan-james)

**Dr Patrick Nolen**  
Department of Economics  
University of Essex  
[pjnolen@essex.ac.uk](mailto:pjnolen@essex.ac.uk)

## More on this research:

Belot, M., James, J. & Nolen, P. (2012). *Changing Eating Habits: a field experiment in Primary Schools* [Online]. Discussion Paper No. 219. Edinburgh: Edinburgh School of Economics. Available from: [http://www.ed.ac.uk/polopoly\\_fs/1.125926!/fileManager/219\\_Changing\\_habits\\_Belot.pdf](http://www.ed.ac.uk/polopoly_fs/1.125926!/fileManager/219_Changing_habits_Belot.pdf) [Accessed 14 April 2014]

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